

# PATENT SPECIFICATION

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## DRAWINGS ATTACHED

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### (54) APPARATUS WHICH ENABLES PASSENGER VEHICLES TO BE CONVERTED TO GOODS VEHICLES, AND VICE VERSA

(71) I, MARIANO BARBED LOIRE a Spanish citizen, of Zaragoza (Spain), Carretera de Madrid, 54, do hereby declare the invention, for which I pray that a Patent may be granted to me, and the method by which it is to be performed, to be particularly described, in and by the following statement:—

This invention relates to apparatus which enables a passenger vehicle to be converted to a goods vehicle and vice versa. The apparatus consists of one or more collapsible seats, and a mechanism for erecting them and folding them. A vehicle fitted with the apparatus of the invention may for example be of use to transport organisations or for industrial firms who may for example use the vehicle as a passenger vehicle for transporting workmen to and from their place of work, and at other times as a goods vehicle.

According to the invention apparatus for enabling a passenger vehicle to be converted to a goods vehicle, and vice versa, comprises a plurality of collapsible seats each connected to an angularly displaceable bar which is in turn connected to an elongated axially movable member, such that when the said member is moved it causes the said bar to be angularly displaced, so that, depending on the direction of axial movement of the said member, the seats are either erected or folded up in unison.

The apparatus is preferably operable from the drivers cab and may be hydraulically, electrically, or pneumatically driven.

According to a preferred embodiment of the invention, the apparatus comprises a first elongated axially movable member in the form of a tube or bar, connected by a connecting rod to a second elongated longitudinally movable member. This second member carries a plurality of brackets at intervals along its length. Each bracket is joined at one end to a transverse bar which is connected by links to the squabs of each seat of a row of seats, in such a way that when the said first member is pulled forward, the seats collapse. Each squab

is preferably connected to a seat back by a bracket so that the seat backs tip forward into a horizontal position to form a continuous platform when the seats are folded.

The invention will now be described by way of example and with reference to the accompanying drawings, in which:—

Figure 1 is a side elevation of part of an apparatus according to the invention, with the seats erected;

Figure 2 is a similar view of the same embodiment, with the seats folded;

Figure 3 is a front elevation of part of the same embodiment, with the seats erected.

In the embodiment shown, an arm 1 is integral with a longitudinal axially movable first elongated member 1<sup>1</sup> in the form of a tube which is slidable on a bar coaxial with it. The arm 1<sup>1</sup> is articulated by a first bolt 2 to one end of a connecting rod 3 which is articulated at its other end by a second bolt 2<sup>1</sup> to a second elongated member in the form of a bar or tube 4. This second bar or tube is also axially movable, and follows the movement of the first elongated member 1<sup>1</sup>. Spaced along the second bar or tube 4 are a number of brackets 5 each of which is clamped at its other end 6 to a transverse bar 7 which passes through a hole in the end 6 the transverse bar 7 being perpendicular to the second bar or tube 4. The bracket 6 is tightened on the transverse bar 7 by means of screws 8.

The transverse bar 7 is mounted in four bearings 9, two of which are positioned on opposite sides of the vehicle body 10, and two of which are positioned on a central longitudinally extending casing 11, thus enabling bar 7 to be turned upon its axis.

A plurality of links 12 are each rigidly fixed at one end to one of the bars 7, by means of a screw 30. Each link 12 is articulated at its upper end to a connecting point 13 on the frame 14 of the squab portion 15 of one of the seats. On each side of the squab 15 of each seat is fixed a seat bracket which connects

the squab to the frame 18 of the seat back 19, the bracket being connected to the frame 18 by a hinge 17. The back face of the seat back is fitted with a reinforced panel which forms part of a loading platform when the seat is folded.

The frame 18 is connected by a hinge 20 with the transverse seat bar 21, which is joined to the seat legs 22 which are fixed to the floor through the lower plate 23 by the screws 31. The top ends 24 of the legs 22 act as supports for the pads 25 mounted on the front of the top of the seat frames 18.

When the seats are folded, the back faces of the seat backs 18 form a continuous level platform which also includes the flat tops 26 of the casing 11. When the seats are erected the flat tops 26 form gangways to facilitate access to the seats.

#### WHAT I CLAIM IS:—

1. Apparatus for enabling a passenger vehicle to be converted to a goods vehicle, or vice versa, comprising a plurality of collapsible seats each connected to an angularly displaceable bar which is in turn connected to an elongated axially movable member, such that when the said member is moved it causes the bar to be angularly displaced, so that, depending on the direction of axial movement of the member, the seats are either erected or folded up in unison.

2. Apparatus for enabling a passenger vehicle to be converted to a goods vehicle and vice versa, comprising a first elongated axially movable member which is articulately connected by an arm to a second elongated axially

movable member, a plurality of brackets being spaced along the second elongated member, each bracket being connected to a transverse bar which is perpendicular to the said second elongated member, the transverse bar being connected to one or more seat squabs by articulated links, such that when the first elongated member is moved axially the seat squabs move in the direction of movement of the first elongated member, and either upwards or downwards, depending on the said direction of movement.

3. Apparatus according to claim 2, wherein each seat squab is connected to a seat back by brackets fixedly attached to the squab and articulated to the seat back, such that when the seat squab moves downward, the seat back folds forward.

4. Apparatus according to claim 3, wherein the seat backs co-operate to form a continuous flat platform.

5. Apparatus according to claim 4, including a hollow casing of rectangular cross-section which houses the second elongated axially movable member and which forms part of the platform when the seats are folded and a gangway between the seats when the seats are erected.

6. Apparatus substantially as hereinbefore described, with reference to the accompanying drawings.

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